

Application No. 09/821,410
Amndt. dated: June 9, 2005
Reply to Office Action mailed: march 16, 2005

REMARKS/ARGUMENTS:

In the specification, paragraph [0014] has been amended to correct a clerical error, so that the sentence is grammatically complete. No new matter has been added.

Claims 1, 9, 16, 19, 26, 31, 39 and 44 have been amended. Claims 7, 17, 33 and 46 have been cancelled. Claims 1-6, 8-16, 18-32, 34-45 and 47-52 are pending in this application for consideration.

Claim Objections – Office Action Section 2.

The Examiner is thanked for noting various errors in the claims. Claim 1, line 3, claim 9, lines 2 and 3, claim 19, line 4 (*sic* 3), claim 26, line 10, claim 31, line 1, claim 44, line 1, and claim 46, line 2 have been corrected as suggested by the Examiner. Claim 16, lines 4 and 5 have been clarified but in a manner different from that suggested by the Examiner. Claim 17, line 5 was correctly presented but the "=" sign appears to have been degraded during facsimile transmission; a bold typeface has now been used to reproduce the "=" sign. In claim 26, "a transmission channel" is correct in both lines 1-2 and 3; the expression in lines 1-2 recites an intended use of the claimed system, whereas in line 3 the indefinite article is correctly used to introduce "transmission channel" as part of the claimed combination. Claim 34, line 1 correctly identifies claim 26 as the parent claim.

Claim Rejections under 35 US 112, first paragraph – Office Action Sections 4 and 5.

Claims 16-25 were rejected under 35 US 112, first paragraph. The Office action states:

"The amendment of the using step recited in claim 16 contains the subject matter which was not originally described in the specification as amended in the specification in paragraph [0014] and claimed in the original claims."

The intending parsing of this sentence is unclear and the objection is not understood. Because the Examiner has not objected to amended paragraph [0014] it appears the Examiner's point is based on a perceived inconsistency between claim 16 and paragraph [0014] (before and after amendment of that paragraph). However, Applicant asserts that the final clause of claim 16 is clearly supported by paragraph [0014] in the original specification in which the first sentence

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describes the "minimizing a difference" step and the second sentence discloses use of the "minimized difference", and also in amended paragraph [0014] in which the "use step" of claim 16 is disclosed in the second sentence of that paragraph. However, in reviewing claim 16, a clerical omission of the words "are used" has been noted in paragraph [0014] and this omission has been corrected. Regarding the assertion in the Office Action that the "use step" was not "claimed in the original claims" a counterpart does appear in the final clause of original claim 16; the Examiner is respectfully reminded that there is no necessity for a claim feature added or modified by amendment to have been present in the original claims, and that wording in an amended claim need not be found verbatim in the original claims or disclosure. If the Examiner's position is that the phrasing of the "use step" in claim 16 does not identically correspond with that used in paragraph [0014] (before or after amendment), the Examiner is respectfully referred to *In re Anderson*, 176 USPQ 331, 336 (C.C.P.A. 1973) and MPEP 2163.07 I. REPHRASING. If the Examiner maintains this ground of rejection, he is requested to state the ground(s) of rejection more precisely. However, it is believed claim 16 as presented by this amendment complies with 35 US 112, first paragraph, as well as its dependent claims 17-25.

Claim Rejections under 35 US 112, second paragraph – Office Action Section 6.

Claims 17 and 19 were rejected as allegedly indefinite. While it is believed the recitations were in substance consistent with parent claim 16, changes in phraseology in claim 16 (now amended to include subject matter from claim 17) and claim 19 have been made. Withdrawal of the ground of rejection is respectfully requested.

Allowable Subject Matter.

The indication of allowable subject matter in claims 9, 33 and 46 has been noted with appreciation. Claim 26 has been amended to include subject matter from claim 33 and claim 39 has been amended to include subject matter from claim 46, such that claims 26 and claim 39 are believed to be in condition for allowance. For consistency of expression, some grammatical rephrasing has been made in incorporating the recitations in claims 33 and 46 into claims 26 and 39, respectively, within the guidelines of MPEP 2163.07. Claims 26 and 39 are believed to be in condition for allowance. Claim 9 has not been substantively amended but is believed to

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remain allowable with its parent claim 1 which, as presented by this amendment, is also believed to be allowable.

The rejection of Claim 17 under 35 US 112, second paragraph, has been addressed in amending claim 16 to include subject matter from claim 17. Claim 17 was not rejected under 35 US 102 or 35 US 103 and included recitation directed to use of a matrix M in the system of claim 16, the matrix M characterized in the same manner as in claims 33 and 46. Consequently, claim 16 as presented should be in condition for allowance.

Rejection of claims under 35 US 102 and 35 US 103.

Claims 1-8, 10, 12-16 and 19-25 were rejected under 35 US 102(b), asserted to be anticipated by US Patent 5,675,612 (Solve). Claims 11, 26-32, 34-45 and 47-52 were rejected under 35 US 103(a), asserted to be obvious over Solve in view of US Patent 6,504,884 (Zvonar). Amendment of claims 16, 26 and 39 to place those claims in condition for allowance renders the rejections of those claims and their dependent claims 18-25 (parent claim 16), 27-32 and 35-38 (parent claim 26), and 40-45 and 47-52 (parent claim 39) moot. The rejections as applied to claims 1-6, 8, 10, and 12-15 are traversed.

The combination of features defined in claim 1 as presented by this amendment, including the combination of features directed to the recited convolution and decoupling, as recited in the final three clauses of claim 1, are not disclosed by Solve and consequently Solve cannot anticipate claim 1. Nor is that combination of features suggested by Solve. Solve is directed to recovering timing phase and frequency of a sampling clock signal in a receiver (Abstract). According to Solve, an "echo canceler 36 generates a replica of the transmitted pulse waveform and subtracts it at summer 52 from the received pulses. The echo canceler is adjusted based on an error signal ϵ between the received symbol and the detected symbol output at summer 66. Such an adaptive echo canceler is typically realized as a traversal (*sic*), finite impulse response (FIR) filter whose impulse response is adapted to the impulse response of the echo path. The error ϵ is used to adjust the filter coefficients to 'converge' the filter's response to the impulse response model of the communications channel." This methodology is distinct from that set forth in claim 1 and is not seen to be directed to computing an estimate of the impulse

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response of Solve's communication channel. Solve's disclosed echo canceler techniques appear more akin to approaches discussed at paragraphs [0004] to [0012] in the specification of the present application.

Zvonar is not seen to add anything to or suggest modification of Solve that would cure the deficiencies of Solve to result in or suggest the feature of claim 11 in the context of implementation of the method of claim 1. Withdrawal of the rejection of claim 11 under 35 US 103 is respectfully requested.

Consequently, claims 1-6, 8, and 10-15 are believed patentable over the cited art and in condition for allowance.

CONCLUSION.

It is believed all objections and grounds of rejection raised in the Office Action have been addressed and are inapplicable in view of amendments to the claims or explanations that have been provided. Favorable consideration and early allowance of the pending claims are respectfully solicited. If there are any remaining issues that could be resolved by discussion, a telephone call to the undersigned attorney at (972) 862-7428 would be appreciated.

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Respectfully submitted,



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